

REMARKS

Claims 6-21 are all the claims pending in the application.

I. Information Disclosure Statement

Applicants filed a third Information Disclosure Statement along with a Form PTO-1449 on August 24, 2006. The Examiner is respectfully requested to initial and date the Form PTO-1449 and return a signed copy to the undersigned in the next PTO communication.

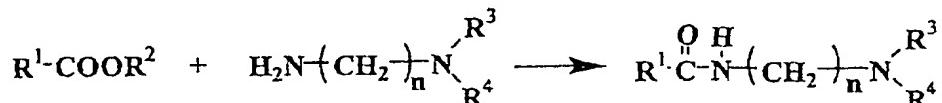
II. Response to Rejection under 35 U.S.C. § 103(a)

Claims 6-13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over JP 11-152260 (JP '260).

Applicants respectfully traverse the rejection for the following reasons.

The present claims are directed to production of:

- 1) an amideamine containing a specific organic phosphonic acid compound by amidation reaction of a diamine (claims 6-9),



where an organic phosphonic acid compound is added to the reactant before the amidation reaction or to the product after removing the excess diamine after amidation reaction, and

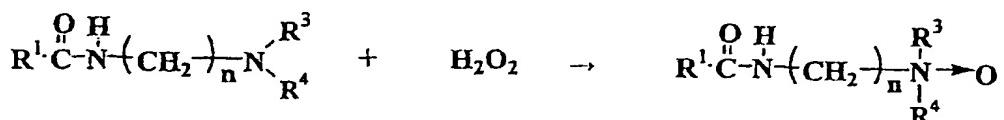
- 2) a betaine from the amideamine containing the organic phosphonic acid compound and a monohaloalkylcarboxylic acid or a salt thereof, e.g., ClCH₂COONa (claims 10-13),



The presently claimed process can provide unexpected results. Specifically, amidation reaction is typically carried out at a relatively high temperature of 80 to 220°C, preferably 90 to 200°C (190 to 200°C in the examples of the present specification). In this reaction, usually a small amount of impurities in the raw materials is converted to colored substance by heat or in the presence of a trace amount of air, thereby causing a marked degradation in the color and the odor of the products. Further, a polyamine such as dimethylaminopropylamine, which is one of the raw materials, is known to be liable to be colored at a high temperature.

In the presently claimed process, an organic phosphonic acid compound is added to the reactant before amidation reaction or to the reaction product of amidation reaction after removal of the excess diamine, in order to prevent the color and the odor of the amideamine and derivatives thereof from degrading by the colored substances. Though the amidation reaction is carried out at a high temperature (90 to 200°C), the degradation can be prevented in the presently claimed process, by adding the organic phosphonic acid compound.

On the other hand, JP '260 describes a method for preparing an amideamine oxide using an amideamine as a starting material. This reaction involves oxidation of an amideamine with hydrogen peroxide in the presence of a specific phosphoric acid or a salt thereof:



The product is described to be stable with a color and an odor.

It is clear that the process described in JP '260 is different from those recited in the present claims. Further, JP '260 does not disclose or suggest the presently claimed processes.

Moreover, Applicants advise that the coloring mechanism in the process described in JP '260 is different from that recited in the presently claims. In this regard, as set forth above, coloring attributes to heat in the presently claimed process, whereas it attributes to oxidation in JP '260.

In JP '260, the oxidation reaction is carried out at 40 to 100°C and preferably 60 to 100°C. JP '260 discloses in paragraph [0014] that when the temperature exceeds 100°C, coloring is insufficiently prevented by the organic phosphonic acid or a salt thereof.

Further, the effect of prevention of degradation of the color and the odor by the organic phosphonic acid compound is exerted in the reaction products different from that in JP '260.

In view of the foregoing, Applicants respectfully submit that the present claims are not obvious over JP '260 and thus the rejection should be withdrawn.

III. Response to Claim Objection

Claims 14-21 were objected to as being dependent from a rejected base claim.

Applicants respectfully submit that the rejection of claims 6 and 7, from which claims 14-21 depend, directly or indirectly, has been overcome as set forth above, and thus the objection should be withdrawn.

IV. Conclusion

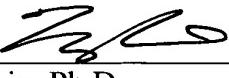
From the foregoing, further and favorable action in the form of a Notice of Allowance is believed to be next in order and such action is earnestly solicited. If there are any

questions concerning this paper or the application in general, the Examiner is invited to telephone the undersigned at (202) 452-7932 at his earliest convenience.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

Date: January 2, 2008

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